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ABSTRACT

The substance of this speech rests on the argument that, if educational change is to be accomplished, the place to begin is not with organizational change but rather with instructional change -- particularly in the area of individualized instruction. The author argues that, to make individualized instruction work, curriculum must be reorganized and materials repackaged to provide teachers with the management tools necessary for success. Specific aspects of instructional change recommended and discussed are (1) detailed specification of educational objectives, (2) organization of methods and materials to attain those objectives (including a variety of paths for attaining a mastery of any given subject), (3) establishment of a procedure for diagnosis of student achievement in terms of educational objectives, (4) scheduling of individual daily evaluation and guidance of each pupil, (5) frequent monitoring of student performance to inform both the pupil and the teacher of progress toward an objective, and (6) continuous evaluation to strengthen both the curriculum and the instructional procedures. (Author/DN)

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KUTZTOWN STATE COLLEGE

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ORGANIZATIONAL AND TECHNICAL ASPECTS
OF EDUCATIONAL CHANGE

by

Robert G. Scanlon

Report No. 8
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ORGANIZATIONAL AND TECHNICAL ASPECTS OF EDUCATIONAL CHANGE*

by
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I am impressed —— Friday evening and yet people come out to this kind of thing. I really think it is great. I'm pleased to be here especially because I see some old friends.

Research For Better Schools is an interesting organization. It has emphasized research and development over the last several years. But I must admit, when you finish a conference as you have, and you have a chance to partake in such good food, you must feel as I did when a friend of mine told me he was visiting his local psychiatrist for treatment of an inferiority complex. After two visits, the psychiatrist advised him not to come back anymore. The fellow said, "Why shouldn't I come back?" The doctor said, "I've determined that you're truly inferior." And I feel that way after I've gone through some of this.

Research For Better Schools has grown from a very small organization in 1966 dedicated initially to the question of dissemination and diffusion. But it has over the years created rather significant research components looking at the problems of typical curriculum development as it relates to individualization; and so we have on-going efforts in math, science, reading, and social sciences. We have an interesting component you haven't heard much about yet that deals with the problem of an atypical curriculum. We have been building programs that teach youngsters how to handle their own feelings, values, and attitudes. It is called our Humanizing Learning Program. We are in the throes of minimal testing. And

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then there is a third type of program that is dedicated to the question of administration —— "Administering for Change" as we call it. All of our experiences have indicated that the number one problem that we face in introduction of innovation in schools is not the retraining of teachers, as a lot of people would like to believe, but rather the retraining of administrators. That is the place we have to begin. We have a total program —— about a fifth of our corporation —— dedicated to that problem, and when I mention it at group meetings like this I usually have either smiles from the teachers or sneers from the principals. It is not meant to be derogatory, it just happens to be a fact.

We also have an interesting program that we started within the last year that is concerned with providing new options for secondary education and have created a private school called "The Academy for Career Education" where we are working in an experimental mode with 100 eleventh graders who are involved in educational clusters with employers. The school is a 12 month school, and if the youngster is interested in exploring the question of communication or the career of communication, we provide three months of experience in television or a television studio, three months with a newspaper, and three months with an advertising agency. We have about eight clusters. It is a promising kind of notion. For this reason, the topic that you've chosen for your conference, "Educational Change Through Organization", is really close to my heart.

We hear in our terminology a lot of things about systems. I turned on the television the other night and a fellow was trying to sell me a razor blade and a razor, but I noticed it was called the Wilkinson Shave System. Then I turned to another station and someone was trying to sell me an airplane ride and it became the Allegheny Air System. So this is the kind of terminology that we have to look at, and it has crept not only into our commercial way of dealing with things,

but also with school actions as well. We hear a lot about PBBS and that kind of systematic change in schools.

When we look at educational change through organization, we should remember that much has happened to schools. There has been a major shift in school organizations and we hear a lot about nongradedness, team teaching, multi-grade, multi-age, middle schools, open classrooms, and differentiated staffing. It seems to us, however, that the place to begin is not the organization of the school to achieve change; we ought to begin with instruction for students. After all, that is why schools exist. If the growth of our schools includes not only cognitive skill development but also the fostering of independence, self-evaluation, self-initiation, and the facts of how to learn, then it seems to me that instruction is in the proper place. Once you have decided what you are going to teach and how you're going to teach it and for what reasons, then you can talk about organizing the school.

From instruction, change in organization will follow. From change in organization, change in instruction does not necessarily follow. Let us explore this change in instruction for the next several minutes and let me suggest some notions that might be helpful to you.

I think we all will admit that individualizing instruction is the theme that stands out above all others. Reformers are challenging schools to individualize with all students at all levels of development. Now, individualization is not a new idea. Good teachers have always sought to make a difference among students through sub-grouping, individual assignments, and tutoring. However, individualized instruction has most often been offered to students who stand out from the rest of the main body. Therefore, we have special education, remedial instruction, enrichment activities, advanced placement, and honors programs. The great middle

group of students usually are denied any sort of individual attention. There is a ground swell effort to do away with the lock-step of grade level instruction in which all students of a given age are assigned to the same grade and required to study the same curriculum in the same way and at the same rate. Homogeneous grouping is now threatened with liquidation, having been found guilty of segregating children along caste and class lines, thus stigmatizing and discouraging children assigned to the low group. Independent study or teacher tutoring is not the essence of individualization, however, and we must remember that individualization is not synonomous with isolation. Individualized instruction occurs to the degree to which for each student we tailor-make programs of study to suit his learning needs and his characteristics as a learner. Training however, must begin with the individual, not the group. Introducing a high degree of individualization cannot be done quickly or by teachers working alone. It requires systematic development in curriculum, tests, materials, school organization, teaching methods, and staff education. Teachers are confronted with the problem of how to teach 30 or more children, each of them coming into the classroom with different experiences, abilities, and needs —— each with a unique set of characteristics as well as a unique rate and style of learning. Some of the consequences of our efforts to meet that kind of challenge include the slow learner unable to cope with the classroom pace, then beginning a lifetime of patterns of failure by dropping out; gifted students, frustrated by being held back, and disillusioned by teachers in many cases less knowledgeable than themselves, often dropping out to find a challenge; and minority groups finding that schools are addressing themselves to middle class values then feeling alienated from the world of education.

Now there has been much debate and little agreement as to the best kind of structure for teaching and learning. Old ideas have continually appeared and

reappeared on the educational scene. A genuinely novel approach has occasionally made its appearance, but no one kind of classroom organization has ever found universal acceptance. Some recent developments, however, have produced a new interest in individualizing instruction, particularly in relation to making the teacher's role more effective. These developments include an awareness of and a need to specify educational objectives in relation to learning tasks, refinement of testing techniques to measure specific goals, and differentiation of classroom responsibilities to provide more opportunities for teacher use of feedback data and diagnosis of student needs.

The assertion that great differences exist among individual students is universally accepted. Teachers have attempted to provide for these differences usually by trying to handle the extremes of the cases. Such a procedure, it seems to us, is a contradictory way of approaching individualization. The teacher sometimes, however, is forced to limit the individualization of a few students who can be handled through tutoring and small group activities.

How can a teacher effectively meet individual student needs in a system designed for and geared to group instruction? Well, there are many considerations that one can think of in changes for a curriculum. To make individualized instruction work, first of all curriculum must be reorganized and materials repackaged to provide teachers with the management tools necessary for success. The development of curriculum for individualized instruction should include and consider the following aspects of instruction as they relate to the individual: detailed specification of educational objectives, organization of the methods and materials to attain these objectives including a variety of paths for attaining a mastery of any given subject, a procedure for diagnosis of student achievement in terms of educational objectives, individual daily evaluation and guidance of each pupil, provision for frequent monitoring of student performance in order to inform both the pupil and the teacher of progress toward an objective, and finally continuous evaluation to

strengthen the curriculum and instructional procedures.

Let us take a look at each of these for a moment or two and see if we can elaborate to give you some suggestions and some help. Structuring the curriculum in terms of levels of difficulty and content areas can provide a basis for expressing students' needs in terms of subjects. Subject areas, as we know, can be divided into several content fields - mathematics can be divided into things such as multiplication and division or addition and subtraction, and we can even look at the processes of visual discrimination or vocabulary development.

With each subdivision we also can specify the objectives that we expect youngsters to master over time. When individualization is based on a carefully sequenced set of educational objectives, these objectives then can be used in planning all other aspects of instruction - lesson materials, teaching methods, instructional settings and diagnostic tests. Then the management and monitoring systems can be geared to these objectives. For individualization to be effective, it does require materials that teach the objectives in each of the curriculum sequences. Therefore, we need to attempt to correlate all of our teaching materials to each of the objectives and use them in a way that hopefully can be self-instructional so that some youngsters can do some things on their own while the teacher is free to provide time for other kinds of activities.

A basic aspect of individualized instruction is the provision for diagnosis of pupil skills and abilities. Diagnosis made of the initial state of the learner entering the instructional situation in terms of previously acquired skills sets the stage for learning experiences. Criterion referenced tests, which do not exist yet on a general market, could be built internally within a school to help a teacher assess the mastery level or the entry level of a youngster in an individualized situation.

One of the biggest problems that teachers face in trying to prepare their

classes for individualization is the ability to provide daily guidance and evaluation for each pupil. Most teachers find it very difficult to build one lesson plan for the whole group once a week. When you move into individualization, you have to find management systems that permit you to build one lesson plan every day for every youngster for every subject that you teach. It can be done.

Monitoring of student performance is another aspect you need to consider. Charting the progress of each student as he moves through the curriculum, and making these reports available to teacher and student is an essential aspect of individualization. This information is also necessary for classroom management. In most of the history of individualization, you will find that where it has failed, it has failed because of administrative techniques and the inability of the school system to provide support services for the teacher for the management needed. This is particularly true for feedback information. There is no doubt in my mind that if we are going to provide for the individual differences that exist in individualized instruction, it is going to have to be done in ratios other than 1 to 30 - that is one teacher for every 30 kids. We have got to look at the problem of adult-student ratio in a lot less than 1 to 30. All of the data from the Follow Through schools indicated that for kindergarten, first, and second grades to achieve significant growth in reading and mathematics, the ratios have to be 1 to 6 or 1 to 8. That does not mean one teacher for every six kids or every eight youngsters; it means one adult for every six or eight. We must develop new kinds of staffing patterns as we look at the problem of remaking curriculum.

Let us take a minute and look at the technical development that we know are taking place in schools. One of the components at the RBS Laboratory is a program called Computer Applications where we have built a math program that we have been using in the city of Philadelphia from a computer point of view. We have read and

heard a lot about the use of computers in schools. Such acronyms as CAI - Computer Assisted Instruction, CMI - Computer Managed Instruction, and CAT - Computer Assisted Testing, are with us. Furthermore, we've lived through the talking typewriter, educational television, and the use of the teaching machine. It seems to me that changes in schools are going to be evolutionary and no technical development is going to create the long-expected revolution.

Let us look at the facts as they are related to current technological development. Technology per se is in competition with the teacher and it has not won yet. I wonder how many of us remember when the radio was invented and heralded as a teacher replacement. The majority of our educational institutions have been designed to maintain the status quo, and no real method of introducing technological development exists within those institutions. Frankly, technology also has promised more than it has ever delivered. The fundamental reason for that is we have never been really willing to pay the price for research and development to accomodate these technical changes. However, technological changes do not necessarily mean hardware introduction into schools. We can introduce new technology in curriculum designs, in the training of teachers, in student motivation, and certainly in being more systematic in our school operations. Recent scholarly findings imply that the information-technological-social change cycle has increased in intensity to the point where every five years may be considered a generation gap.

For those involved in educational research and development, the future is the present. The problems of accomodating present needs and providing for future changes while retaining continuity of effort poses very complex problems. In 1964, an outstanding group of educators attempted to predict the major emphasis for education. In 1971, one of the members of this group assessed the results of some of these efforts. To compare this is interesting. It suggests that in research and development in the 1960's there had been some problems of unanticipated complexity that we have

not solved. For example, the strength of the bureaucracy in education was unanticipated in research and development; the issues of curriculum or new materials adoption and distribution was unanticipated; the training of teachers to use this curriculum, and the training of supervisors and administrators were also unanticipated, complex problems.

Furthermore, it seems to us that we worked under some false assumptions in the past. One of the assumptions that we made was that the discovery of the structure of knowledge would have great impact on the change in schools and that just has not happened. Another assumption that we made was the idea that learning was what students really wanted to do, and that expertise was desired in some subject matters. Motivation, for example, was taken for granted. Now it is a whole new ball game.

There are a lot of future problems that we face, and I am sure research and development, which is rather new in the educational division, will lead the way. I do not want to seem pessimistic about what we have been doing because I think there is a bright future for changes in schools, changes being introduced by properly changing the principals and by introducing some new changes for teachers.

But let me close, if I may, by sharing with you a favorite poem of mine which suggests some of the things we need to consider as we go back to our schools and our classrooms. It may be familiar to you, but let me recite it anyway. It goes:

If you can't be a pine on the top of a hill
Be a scrub in the valley - but be.
Be the best little scrub by the side of the rill;
Be a bush if you can't be a tree.

If you can't be a bush then be a blade of grass
And some highway happier make.
If you can't be a muskie, then just be a bass;
But be the liveliest bass in the lake.

We can't all be captains, we've got to be crew,
There's something for all of us here.
There's big work and hard work that we must do
Which will give us both joy and cheer.

If you can't be a highway, then be a trail.
If you can't be the sun, be a star.
It isn't by boasting and wishing that you win or fail,
It's by being the best of whatever you are.

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